This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF THE CLAIMS:

1. (Canceled)

2. (Previously Presented) The method as claimed in Claim 23, wherein said information collected relates to past, current and future input video frames comprising said sequence.

3.– 5. (Canceled)

6. (Currently Amended) The method as claimed in Claim 23, ~~further including the step of: calculating a~~ wherein said dynamic weighted picture complexity ~~defined~~ is calculated as a function of motion magnitude and picture quality index.

7. (Canceled)

8. (Currently Amended) The method as claimed in Claim [[5]] 23, further including the step of: implementing rate control scheme to prevent underflow or overflow of a decode buffer requirement implemented according to a MPEG-2 standard.

9. (Original) The method as claimed in Claim 8, wherein the rate control scheme implements steps for adjusting the target bit allocation to prevent said decode buffer underflow or overflow.

10. (Currently Amended) The method as claimed in Claim [[4]] 23, ~~wherein the step of encoding the incoming frames includes implementing said second encoder device for receiving said coding parameters,~~ wherein said information collected from said first encoder device ~~collects~~ includes direct video frame signal information and intermediate results in various frame encoding stages under same encoding operation conditions as employed by said second encoder device.

11. (Original) The method as claimed in Claim 10, wherein said first and second encoder devices operate at the same constant bit rate (CBR).

12. (Canceled)

13. (Previously Presented) The system as claimed in Claim 24, wherein said information collected relates to past, current and future input video frames comprising said sequence.

14. – 16. (Canceled)

17. (Currently Amended) The system as claimed in Claim 24, ~~further including means for calculating a~~ wherein said dynamic weighted picture complexity ~~defined~~ is calculated as a function of motion magnitude and picture quality index.

18. (Canceled)

19. (Currently Amended) The system as claimed in Claim [[16]] 24, further including means for implementing rate control scheme to prevent underflow or overflow of a decode buffer requirement implemented according to a MPEG-2 standard, wherein the rate control scheme implements steps for adjusting the target bit allocation to prevent said decode buffer underflow or overflow.

20. (Currently Amended) The system as claimed in Claim [[15]] 24, wherein said information collected from said first encoder device ~~collects~~ includes direct video frame signal information and intermediate results in various frame encoding stages under same encoding operation conditions as employed by said second encoder device.

21. (Original) The system as claimed in Claim 20, wherein said first and second encoder devices operate at the same constant bit rate (CBR).

22. (Canceled)

23. (Currently Amended) A method for real-time multi-pass encoding of a sequence of video frames comprising the steps of:

calculating a look ahead window for determining a size of an input buffer and correlating said buffer size to a processing delay;

simultaneously feeding, in real-time, a sequence of incoming video frames to ~~an~~ said input buffer and a first encoder device;

continuously collecting information from said first encoder device, in real-time, on the statistics and rate-quality characteristics of said sequence of incoming video frames;

~~deriving a coding strategy to encode the sequence of incoming video frames based on the information collected;~~

~~generating coding parameters for instructing a second encoder device to encode said incoming frames according to said derived strategy; and,~~

jointly determining, by a processing device, an optimal target bit allocation scheme for all frames in said look ahead window as a function of a calculated dynamic weighted picture complexity based on the information collected from said first encoder device and an available bit budget for all frames in the look ahead window;

encoding, by ~~said~~ a second encoder device, ~~the~~ each current incoming frames ~~by the derived coding strategy,~~ using the target bit allocation for said current incoming frame; and

continuously updating the said look ahead window by removing the current frame encoded by said second encoder device with a next frame from said sequence and repeating said look ahead window calculating through said second encoder device encoding steps,

wherein said input buffer implements [[a]] said correlated processing time delay of sufficient time such that sufficient information may be collected from said ~~sequence by said~~ first encoder device for deriving said jointly determined optimal target bit allocation by said processing device ~~coding strategy~~.

24. (Currently Amended) A system for real-time multi-pass encoding of a sequence of video frames comprising:

an input buffer implementing a look ahead window;

a first video encoder device;

a second video encoder device;

an information processing device;

a means for calculating a sufficient look ahead window for determining a size of said input buffer and correlating said size to a processing delay;

a means for simultaneously feeding, in real-time, a sequence of incoming video frames to said input buffer and first video encoder device[[,]];

said ~~first video encoder device for~~ information processing device continuously collecting information, in real time, on the statistics and rate-quality characteristics of a sequence of input video frames within said look ahead window from an output of said first video encoder device; ~~and~~

said information processing device further jointly determining an optimal target bit allocation of all frames in the look ahead window based on information collected from said first encoder device and the available bit budget for said all frames in said look ahead window;

~~means for deriving a coding strategy to encode the incoming frames based on the information collected; and,~~

means for ~~generating coding parameters for~~ instructing said second video encoder device to encode said incoming frames according to said ~~derived strategy~~ jointly determined target bit allocation, said second video encoder for encoding the incoming sequence of frames according to ~~the~~ coding ~~strategy~~ instructions,

means for continuously updating the said look ahead window by removing the current frame encoded to said second encoder device with a next frame from said sequence and by repeating of said look ahead window calculating through said second encoder device encoding,

wherein said input buffer means implements [[a]] said correlated processing time delay of ~~proper~~ time such that sufficient information may be collected from ~~said input sequence by~~ the output of said first video encoder device for deriving said jointly determined target bit allocation by said information processing device ~~coding strategy~~.

25. (Canceled)